Accomplishments

Under the VEEP, participants are required to report annually on their environmental management system and pollution prevention accomplishments. Highlights from these reports will be posted on this page.

E2:

Graham White Manufacturing (report submitted 11/28/01)

- **Pre-coated Foundry Sand**: Perhaps the largest environmental accomplishment the company made during the past year is a change in the way that foundry sand is coated with resin. The purpose of coating the sand is to mix a binder into the sand so that when heated it will harden and readily form a shell, which is the mold into which molten metal is poured. Historically, the foundry had coated its own sand on-site using a phenolic resin. The resin was trucked in and stored in a storage tank. Upon demand, the resin was pumped into the facility and mixed in a muller with the sand. The coated sand then would be stored until needed in the mold forming operation.

  In early 2001, the company began experimenting with a pre-coated sand (sand that when received on site already had the binder in it). Early tests indicated that the sand would perform equally well or better than the company-coated sand. The company experimented for several months, monitoring mold strength, mold forming cycle time, required mold weight, and the performance of the molds upon introduction of molten metal. The primary expected benefit of the new sand was elimination of methanol releases during the mixing process. This was achieved because the methanol was not present upon receipt of the sand and there was no mixing required on-site. Graham White reported a total of 36,458 lbs. of methanol released during 2000 on the annual TRI report. In the future, there will be no methanol released to the air as a result of the change to using pre-coated sand.

  Other unexpected benefits of the pre-coated sand have become evident, the first of which is a reduction of individual mold weight. The amount of sand used in a mold is proportional to the strength of the mold. The company found that they could reduce the amount of sand used in many of the molds that they make. This also reduces the cycle time of the mold forming operation. To date, the facility has documented $71,291 in annual timesavings and $22,057 in annual sand savings.

- **Resin**: Part of the original sand mixing system required the facility to store flammable phenolic resin in a 7,000 gallon outside above ground storage tank (AST). The AST has been emptied and will soon be removed. As a result of changing to the new pre-coated sand, the facility no longer needs to store this resin on site. It also has allowed the elimination of approximately four 55-gallon drums of hazardous waste per year.

- **New Sand Reclaim System**: In September of 2001 Graham White installed a new Didion Rotary Media drum. This unit separates the castings from the loose sand and breaks down mold lumps to grain size and allows the facility to offer the sand to another local business, which re-uses the sand in their process. While Graham White had a sand reclaim unit in operation prior to this installation, this newer unit has replaced the function of two separate pieces of machinery. Its new location is much more central to the use of the sand and reduces employee travel time in sand handling by about seven miles per day.